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# Implementation Guidelines for Massachusetts Board of Higher Education Developmental Education Policy for the Commonwealth's Public Colleges and University

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## Executive Summary

In March 1996 the Board of Higher Education adopted a policy on developmental education that restricts enrollment in developmental reading, writing and mathematics courses at four-year public institutions of higher learning. Following passage of the new policy, representatives of the university, state college and community college segments were invited to participate in a Developmental Advisory Group formed to work on the policy's implementation. The Advisory Group recognized the advantages of system-wide definitions and sound implementation practices related to the Board's developmental education policy. This *Implementation Guide* is an outgrowth of the Group's efforts to define good practice and to encourage institutions to engage in inter-segmental collaboration in delivering developmental instruction.

In working toward coordinating institutional and board policies related to developmental education, Massachusetts public institutions should aim for the *best practice available* in assessment, course placement, instruction, and post-assessment. Best practice fosters student success and emphasizes efficient use of educational system resources.

Some signals that this coordination is occurring successfully are:

- ◆ collaboration among educational sectors on developmental/remedial issues with developmental course enrollment declining on four-year campuses;
- ◆ early screening of students with prompt feedback on testing results;
- ◆ timely referral to appropriate placement; and
- ◆ post-assessment of competencies.

The Board action requires that the State Colleges and UMass limit enrollment of freshmen in developmental courses to no more than 10% of the freshman class by the fall of 1997 and no more than 5% by the fall of 1998. This cap applies to all first-time freshmen, including part-time students, and is calculated based on unduplicated headcount -- not FTE status. Students whose developmental needs are accommodated prior to their enrollment as freshmen do not count against the developmental cap. The Board will monitor institutional developmental education efforts to assess the new policy's impact.

The Developmental Advisory Group will continue to work on updating definitions and policy guidelines related to developmental issues. This *Implementation Guide* and any updates or revisions will be disseminated to campuses directly and will also be available through the Board of Higher Education's world wide web home page at <http://www.mass.edu/bhe>.







## I. Evolution of Developmental Education Policy

In March 1996 the Board of Higher Education<sup>1</sup> adopted a policy on developmental education that requires the four-year public institutions of higher learning to enroll no more than 10% of the freshman class in developmental reading, writing and math courses by September 1997 and no more than 5% by September 1998. The Board has encouraged pairings between two-year and four-year institutions with the goal that four-year institutions should rely on two-year institutions as the access point for developmental instruction.

The Board of Higher Education has also instituted new admissions criteria. Briefly, they include a minimum GPA<sup>2</sup> and a minimum of sixteen college preparatory courses. This combination of more rigorous admissions requirements and the reduction of developmental instruction on four-year campuses represents the Board's deliberate and coordinated effort to raise admissions standards and student performance expectations in Massachusetts public four-year institutions.

Reducing the amount of developmental instruction offered on four-year campuses reinforces the Board's action raising admissions standards and the actions of campuses in developing joint admissions agreements between two-year and four-year institutions. These policies are consistent with national trends in higher education and with the Board's intent to use coordination and collaboration to effect positive change within the Commonwealth's public colleges and university.

The Board last undertook a systematic examination of developmental education within the state's public colleges in 1989 as part of a study on the undergraduate experience.<sup>3</sup> That study resulted in standards for college-level

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<sup>1</sup> The Higher Education Coordinating Council adopted the name "Board of Higher Education" as a result of Legislation passed in July 1996. In years prior to its being known as the Higher Education Coordinating Council, the agency had been known as the Board of Regents of Higher Education.

<sup>2</sup> The new minimum GPA requirements are being phased in over a two-year period. Applicants for the Fall 1997 freshman class must have a high school GPA of at least 2.60 to be accepted into the State Colleges and 2.75 to be accepted into U Mass. Applicants for the Fall 1998 freshman class must have a GPA of at least 2.70 to be accepted into the State Colleges and 3.0 to be accepted into U Mass. Only college preparatory courses will be used to calculate the high school GPA.

<sup>3</sup> See *Final Report - The Undergraduate Experience*, (June 1989) Board of Regents of Higher Education.







work<sup>4</sup> and underscored developmental instruction as one responsibility of institutions to admitted students:

*Students vary, then, in the degree, type, and reason for their level of preparedness for college study. Nonetheless, every student admitted deserves the opportunity to make up for inadequate preparation and to develop the skills necessary to succeed at college-level work. Once accepted into an institution, every student should be assured that the institution will make available the necessary developmental instruction at the appropriate time in the undergraduate experience.*

The Board mandated assessment in English composition, math, and reading of all first time freshmen<sup>5</sup> and required both placement in developmental instruction for students with academic deficiencies in these basic skills as well as post-assessment evaluation to determine whether students enrolled in developmental instruction had attained the skills necessary to proceed with college-level instruction.

While each campus was allowed to develop its own methods of student assessment, placement, instruction delivery, and post-assessment, the Board intended that support for developmental programming be made available on a systemwide basis.

*The Board of Regents shall undertake systemwide planning to ensure that resources are available to support appropriate developmental programs. Institutions should see that faculty are rewarded for effort and excellence in developmental teaching and for creatively designing programs that provide effective developmental instruction.<sup>6</sup>*

Current Board policy recognizes that students—who approach postsecondary education with varying degrees of preparation—should have access points into the public higher education system that are most suited to their needs. Heightened admissions standards to four-year campuses, open admissions at community colleges, and inter-institutional communication and planning are measures that reduce the need for developmental courses at four-year campuses and recognize segmental differences within the system. These measures also preserve access into the public system, while ensuring that students benefit from the lengthy experience and historic excellence of community colleges in offering developmental programs of distinction.

Following the Board's March 1996 passage of the new policy on remedial course enrollment, a Developmental Advisory Group was established to work on

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<sup>4</sup> op.cit. pp. 15-16.

<sup>5</sup> op.cit. pp. 5-7.

<sup>6</sup> op.cit. p. 10.







the policy's implementation.<sup>7</sup> Representatives of the university, state college and community college segments were invited to participate. This *Implementation Guide* is an outgrowth of the Advisory Group's efforts to actively encourage institutions to promote cross-segmental collaboration on developmental issues.

## II. Best Practice

At Massachusetts public institutions, best practice in developmental education:

- ◆ fosters student success.
- ◆ calls for early assessment of students' skill levels in reading, writing and math using testing instruments designed for assessment and course placement.
- ◆ encourages providing developmental instruction through collaborative arrangements prior to fall semester enrollment.
- ◆ refers students to specific developmental coursework in reading, writing and math based on common standards and practices.
- ◆ recognizes developmental education as a primary function of community colleges and not of four-year institutions.
- ◆ supports more highly selective admissions practices at four-year institutions and supports open admissions at community colleges.
- ◆ encourages collaborative practices between four-year institutions and community colleges.
- ◆ supports students with effective referral policies and provision of personal contacts to collaborative arrangements that work well.
- ◆ supports clear articulation with the K-12 sector about expectations and feedback on student performance.

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<sup>7</sup> The following college and university representatives were invited to participate in the Developmental Advisory Group: Carole Cowan, President, Middlesex Community College, Joseph Deck, Vice President, University of Massachusetts, David Hartleb, President, Northern Essex Community College, Al Hamilton, Vice President for Academic Affairs, Salem State College, Janice Motta, Executive Officer, Massachusetts Community Colleges, William O'Neil, Executive Officer, Massachusetts State Colleges, and Michael Riccards, President, Fitchburg State College. Others from the campuses who attended Group meetings were Gerald Burke, Executive Director, Community College Institute, Gerald Higdon, Chair, Department of Mathematics, Fitchburg State College, David Kelley, Assistant Dean, Division of Instructional Support Services, Northern Essex Community College, and Glenn Pavlicek, Professor of Mathematics, Bridgewater State College. The Group was chaired by BHE Vice Chancellor, Jack Warner. BHE staff liaison was Aundrea Kelley.







- ◆ encourages timely and consistent quantitative and qualitative data collection to monitor enrollment, progress, outcomes and cost.
- ◆ emphasizes efficient use of scarce system resources.

More best practice that has emerged primarily out of community college experience and expertise in developmental education:

- ◆ provides professional development for faculty committed to teaching developmental coursework.
- ◆ holds that early assessment, proper placement, and consistent intervention will lead to a high retention rate for developmental students.
- ◆ will have available a wide range of developmental courses that will help students overcome their deficiencies in reading, writing or math.
- ◆ provides accessible, comprehensive tutoring, study skills and student support services embedded in or directly associated with developmental coursework.
- ◆ integrates computer-assisted instruction into developmental coursework, tutorial services and learning labs.
- ◆ provides developmental students a self-paced instructional format in those areas where they need remediation.
- ◆ encourages strict implementation of mandates regarding completion of developmental coursework and discourages students from dropping courses at whim.
- ◆ supports registration processes that prevent students from entering inappropriate higher level courses when they haven't successfully completed developmental course requirements.
- ◆ provides post assessment which certifies the student's competency to pursue college level work.

The Board of Higher Education encourages campuses to aim for the *best practices available* to assess, place, instruct, and post-assess students needing developmental education. Admissions officers, registrars and assessment coordinators all play an important role.







### III. Keys to Sound Implementation

#### 1. *Early screening*

Screening of students for academic skill deficiencies starts in the college or university admissions office. Applicants to selective institutions who are marginally qualified or otherwise "at risk" of needing developmental instruction should be assessed prior to the admissions decision. To the greatest extent possible, all applicants should take assessment examinations while they are still in high school. Using computer adaptive placement tests and related software offers important advantages, including immediate feedback about test performance. This technology also contains an advising component which directs students to proper placement in reading, mathematics and writing. Parameters such as curricular demand can also be programmed in. Since adaptive tests automatically adjust levels of difficulty as the student is taking the test, computerized assessment models are time-efficient. Computerized assessment models require only one quarter of the questions that paper and pencil tests need in order to gauge the student's achievement level and they are well suited to post-testing. Beyond the investment in hardware and software, computer testing is also reasonably cost effective. Applicants identified as needing developmental instruction may then enroll in the necessary coursework during the spring or summer *prior to* their matriculation at a four-year public college or university or at a nearby community college.

Students whose records clearly indicate the need for developmental studies in two or more skill areas or students whose records suggest that a community college environment is more appropriate as they begin their college career should be referred to the community colleges for admission and should receive information regarding the possibility of joint admissions.

#### 2. *Early assessment, prompt referral, and appropriate placement*

**Early assessment of skill levels in reading, writing and math is required for all incoming freshmen in all institutions.** Marginally qualified students, students who are admitted under the "special exceptions" category, and students whose prior academic records indicate a pattern of academic skills weakness should be targeted for very early assessment and referral to the appropriate level of intervention. Assessment instruments which are designed for course placement purposes should be used for these assessments.

Because solid reading skills are fundamental to most students' ability to acquire knowledge in every collegiate subject, campuses should pay special attention to the assessment of reading and, where indicated, to the prompt placement of students in the developmental reading instruction needed.







Institutions should use standardized assessment tools which are specifically designed as academic skills assessment and course placement instruments with common, agreed-upon cut-off scores. Students should receive *prompt feedback* —at the time of assessment— of results and implications of results so that they will know as soon as possible how well they performed on assessment instruments and what the results mean for them. Placement policies should be clearly written and shared with students directly. The Board encourages campuses to use computer adaptive assessment mechanisms whenever feasible and discourages use of tests such as the SAT or ACT, which are not designed specifically for academic skills assessment and course placement in reading, writing and math.

### 3. Collaborative arrangements.

Early referral to developmental coursework through collaborative arrangements with an appropriate community college during the summer prior to the freshman year is preferable. More serious cases —students needing developmental instruction in two or more subjects— may still be admitted to the four-year campus. However, the student should take his or her first semester at the appropriate community college. Such a student will still be acknowledged as a student of the four-year institution.

### 4. Post-assessment

Based on current policy specified in *The Undergraduate Experience*, upon completion of developmental coursework students should receive post-assessment of competencies to ensure readiness to begin college level study. Adaptive tests are useful here also and are especially important to ensuring common exit criteria.

## IV. Monitoring

Institutions are required to submit information about their developmental education practices to the Board of Higher Education periodically. The information submitted will be evaluated by the Developmental Advisory Group to assess how campuses compare to best practice approaches.

Four-year institutions will provide figures for unduplicated headcount enrollment of first-time freshmen in developmental courses offered, as well as descriptions of collaborative arrangements with two-year institutions or other alternatives such as provision of developmental instruction prior to the incoming student's enrollment. Information on assessment and post-assessment data







also will be requested. Developmental course enrollment will be monitored using the using Research and Planning and Enrollment and Degrees Systems (RPEDS) reporting system.

## V. Definitions

The Board action requires that four year campuses limit enrollment of freshmen in developmental courses to no more than 10% of the freshman class in the fall of 1997 and no more than 5% by the fall of 1998. This cap applies to all first-time freshmen, including part-time students, and is calculated based on unduplicated headcount, not FTE status. Students whose developmental needs are accommodated prior to their enrollment as freshmen do not count against the developmental cap.

Best practice in developmental education involves more than reading, writing and arithmetic. It also includes study skills, subject matter support, supplemental instruction, student success seminars, and other related approaches. In fact, students requiring two or more developmental courses are likely to need a wide range of skills-building instruction.

According to the National Association of Developmental Educators (NADE), developmental education includes programs and services that “commonly address academic preparedness, diagnostic assessment and placement, development of general and discipline-specific learning strategies, and affective barriers to learning.” The Association lists the following goals of developmental education:

- To preserve and make possible educational opportunity for each postsecondary learner.
- To develop in each learner the skills and attitudes necessary for the attainment of academic, career and life goals.
- To ensure proper placement by assessing each learner's level of preparedness for college course work.
- To maintain academic standards by enabling learners to acquire competencies needed for success in mainstream college courses.
- To enhance the retention of students.
- To promote the continued development and application of cognitive and affective learning theory.







In Massachusetts public higher education, courses designed to *prepare* students for college level work are considered to be developmental courses. The definitions for college-level course work in Massachusetts public higher education reported in *The Undergraduate Experience*<sup>8</sup> still apply today and are included in the following appendix to this guide.

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<sup>8</sup> See *Final Report - The Undergraduate Experience*, (June 1989) Board of Regents of Higher Education







## Appendix A: Additional Definitions

The following excerpts on definitions of college-level work in writing, math, and reading are contained in *The Undergraduate Experience*.<sup>9</sup> ***The Undergraduate Experience* emphasizes that Board policy does not allow degree credit for developmental coursework:**

*Developmental instruction should not receive credit toward the associate or baccalaureate degree.*

**Writing (English Composition):** College-level English composition courses should involve the development of complex and abstract ideas for different writing situations and emphasize the different steps of the writing process leading to fluent, effective expression. Courses that are concerned primarily with grammar, usage, punctuation, or grammatical sentences and paragraphs should not receive credit toward the degree.

**Mathematics:** College-level mathematics courses should build upon the competencies acquired during the equivalent of at least three years of high school algebra and geometry. Courses covering computational concepts only should not carry credit toward the degree. Courses designed to teach students how to apply mathematics to specific fields, such as those offered in community college occupational programs, may be offered for credit toward the degree to be earned in those programs but will not be considered equivalent to college-level mathematics for the purpose of transfer of credit to baccalaureate institutions.

**Reading:** Reading assignments in courses carrying credit toward the degree should be college-level material. Courses dealing primarily with general reading skill, such as word identification, the ability to identify and comprehend the main and subordinate ideas, to use reference materials, to summarize the ideas in one's own words, and other technical aspects of reading should not receive credit toward the degree.

**Basic Study Skills:** Courses to improve students' basic study skills and work habits should not be offered for credit toward the degree.

**Required Placement in Developmental Instruction:** Students who do not demonstrate the necessary skills and competencies in English composition, mathematics, and reading for college-level work will be placed initially in appropriate developmental courses and given other appropriate developmental education experiences before being enrolled in related college-level courses requiring those skills and competencies.

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<sup>9</sup> op.cit. p.iv, p.16, p.10.





## Appendix B. Two-year — Four-year Collaboration

The Board's initiative on developmental enrollment has spurred significant collaborative activity between the two-year and four-year segments in each geographic region and brought to light several ventures between public colleges and their feeder high schools. Nearly all four-year campuses are working together with community colleges to achieve best practice goals.

Massachusetts community colleges have established a Developmental Education Advisory Group.

State college math teachers formed a task force to determine good practices in math assessment and skills development.

Five campuses -- North Shore, Middlesex, Northern Essex, Salem State and University of Massachusetts Lowell -- have set up their own developmental advisory group.

In the fall of 1996, the Board of Higher Education awarded grants to three collaboratives under the Campus Performance Improvement Program: Quinsigamond Community College and Worcester State College received a \$280,000 grant for a model program of collaboration for joint admissions, developmental education, and student support. The program includes linkages with area high schools. Quinsigamond will deliver a developmental program that includes a pre-college academy at the community college campus and a two-way enrollment agreement between Quinsigamond and Worcester.

The Board awarded \$124,000 to the University of Massachusetts Boston and Massasoit Community College to collaborate on a joint assessment, placement, and advising program, and a program for faculty at the two campuses to work on general education activities. The grant will also enable Massasoit to participate in the Urban Collaborative Enhancement Project which already includes UMass Boston, Bunker Hill, Roxbury and Mass Bay Community Colleges.

The University of Massachusetts Lowell received a \$35,360 grant that will allow Math faculty to continue their work with high school juniors to assess their level of math knowledge and advise students on courses they should take in their senior year.

Westfield State College and Holyoke Community College are working on a model collaborative developmental assessment and course delivery process for applicants to the freshman class. The program design includes a computerized standard assessment system and basic skills "boot camp". Incoming students would go to their nearest public institution for testing and have the score reported to the institution they plan to attend in the fall. The home institution would make the placement decision. Students needing developmental work would attend the academic summer program for intensive developmental work in the subjects indicated.





Other potential collaborations are focusing on using technology to enhance delivery of developmental courses over an interactive fiberoptic network, cost-saving methodologies, and sharing technical know-how.

Nearly all two-year and most four-year campuses participate in Tech Prep or similar partnerships with dozens of area high schools. These consortia have been successful in bringing together faculty from the higher education and high school sectors. As a result, several high schools have modified their curricula in English, math and science and initiatives are underway to test students while they are still in high school. These ventures help mitigate students' need for collegiate developmental instruction in reading, writing and math while they are still in high school.

The Board of Higher Education is currently implementing college to school reporting using Research and Planning and Enrollment and Degrees Systems (RPEDS) data. This reporting mechanism will help high schools pinpoint performance of their graduates during the freshman year at a Massachusetts public college or university, including GPA, developmental courses taken, number of credits earned, and whether they return for the sophomore year.

Partnerships between high schools and public colleges are a win-win situation for students, taxpayers and participating institutions. Students are better prepared for college level work, institutions receive funding subsidies from the business and philanthropic sectors, and the need for tax funding for collegiate developmental instruction is minimized.

Survey data gathered from the Developmental Questionnaire administered to campuses during the summer of 1996 revealed that several four-year campuses are already within a few percentage points of the Fall '97 remedial cap. The inter-institutional collaboration that is taking place is a good sign that more four-year campuses will be able to demonstrate reduced enrollment in developmental courses. Following is a summary of collaborative activity as reported by campuses.





## Collaborative Arrangements Reported on Developmental Survey

### University

#### Arrangements with other colleges:

**U Mass Amherst (UMA)** held preliminary discussions with area community colleges (Berkshire, Greenfield, Holyoke, & Springfield Technical). Separate follow-up meetings were held for Math and English writing faculty from the university and community colleges to discuss competencies of incoming students, basic curricula and means of assessment. Faculties will have follow-up meetings.

**U Mass Lowell (UML)** English department faculty met with their counterparts at Middlesex Community College to discuss curricula. ESL programs are being closely coordinated with ESL programs at area community colleges. UML tutoring services are available to Middlesex and Northern Essex students. UML students who need beginning ESL courses may attend Middlesex or Northern Essex through NECCUM.

**U Mass Dartmouth (UMD)** is engaged in mutual planning with Bristol Community College for curricula and data exchange.

**U Mass Boston (UMB)** is in discussions with Bunker Hill and is working with Massasoit to facilitate transfer of students to the UMB composition program.

#### Arrangements with feeder high schools:

The university hosts in-service training for small groups of secondary school math teachers each fall and an annual all-day Open Forum to which all Massachusetts secondary school math teachers are invited. UMA also sponsors and supports the Western Massachusetts Writing Project (WMWP). This local site of the National Writing Project provides in-service training, workshops for K-12 college level teachers, and teacher consultations on curriculum design, testing, and assessment.

The English department developed a writing portfolio program in conjunction with North Reading High School. The Program is being expanded to other feeder schools. Advanced area high school students may enroll in College Writing I. The university is developing a "High School Teacher in Residency" program for further coordination of Lowell's expectations of local high school curricula. The Math Department sponsors Mass MAJIC (Mathematics Advice for Juniors to Make Informed Choices), a program that offers prognostic exams to high school juniors based on their math ability and career objectives. The goal is to ensure that in their senior year students will take the math course that will most appropriately prepare them for college.

UMD is involved in college readiness programs in nearby middle schools and high schools, including Upward Bound, Start Plus, and the Neighborhood College.

UMB participates in multiple partnerships with urban high schools and conducts several campus-based college readiness programs including Upward Bound.



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## State Colleges

### Arrangements with other colleges:

**Bridgewater State College (BSC)** has been engaged in discussions with area community colleges about potential collaboration.

**North Adams State College** held preliminary discussions with Berkshire Community College regarding facility sharing and distance learning methods of serving developmental education needs.

**Salem State College** held discussions with Middlesex, Northern Essex and North Shore Community Colleges. Salem currently refers applicants who are not ready (for college level courses) to community colleges for preparatory work.

**Westfield State College** is collaborating with Holyoke Community College to develop a computerized standard assessment system and basic skills boot camp. Incoming students would go to their nearest public institution for testing and have the score reported to the institution they plan to attend in the fall. Students needing developmental work could then attend summer academic boot camp for intensive developmental work in the subjects indicated.

**Worcester State College** submitted a grant proposal to have Quinsigamond Community College offer developmental courses for Worcester students at the community college campus.

### Arrangements with feeder high schools:

BSC provides information to area guidance offices regarding admissions requirements and is holding discussions with area schools about potential summer programs.

Salem participates in the North Shore Tech Prep Consortium along with North Shore Community College and 14 area high schools. Salem's admissions office also collaborates efforts with 5 area high schools.

Westfield shares data with high schools on the performance of their graduates.

The grant proposal includes "2-2-2" collaboration between Worcester, Quinsigamond, and area secondary schools to work with high school juniors and seniors and help mitigate the need for collegiate developmental instruction.



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## Community Colleges

### Arrangements with other colleges:

**Bristol Community College** started discussions with UM Dartmouth regarding developing collaborative ventures for developmental instruction.

**Bunker Hill Community College** is engaged in discussions with RCC and UMB regarding delivery of developmental education. BHCC is also holding discussions with RCC, NSCC, MSCC and UML regarding distance learning developmental courses over an interactive fiberoptic network.

### Cape Cod Community College (CCCC)

**Holyoke Community College** is collaborating with Westfield State College to develop a computerized standard assessment system and basic skills boot camp. The model 6-week summer academic boot camp - which students could attend at the community college nearest their home - could be jointly sponsored by the 4yr-2yr sectors.

### Arrangements with feeder high schools:

Bristol participates in several collaborations to facilitate preparation of high schoolers for college-level work, including the Mass Adaptive Computing Network, Mass Transition Initiative (helps transition of people with disabilities), Upward Bound, New Bedford Talent Search, and BCC Tech Prep Consortium. Bristol has articulation agreements with 19 high schools.

Bunker Hill Community College is a Member of the Boston Higher Education partnership and conducts skills assessment for 300 high schoolers annually; and training & professional development for K-12 faculty and administrators. Other collaborations include: College Success, Early Access, Edward Middle School, Fenway Middle College, Kids to College, MEOP, Tech Prep, NYNEX/Bell Atlantic Fiber Optics, Scholarship Program, School to Work, and Dual Enrollment.

Since 1992 CCCC has assessed basic skills of Tech Prep students from 11 of 15 feeder high schools. Students complete computerized placement exams in reading, sentence skills, elementary algebra and college math. Students are tested at the beginning and end of the junior year and the end of the senior year. Results are analyzed and distributed to high schools. Workshops for high schools regarding the assessment and nature of developmental and college courses have led to major curricular revision at some participating high schools.

Holyoke is one of 3 community colleges and 21 high schools participating in Tech Prep West (which focuses on curriculum development in English, math and science to help prepare high schoolers for college level work). Teams of high school and college faculty meet regularly to identify specific competencies and to develop appropriate 11th and 12th grade courses in Applied Communications, Applied Math, and Applied Science.



1. Introduction

The purpose of this study is to investigate the effects of the proposed system on the performance of the system. The study is divided into two main parts: a theoretical analysis and an experimental evaluation. The theoretical analysis is based on the principles of the system and the experimental evaluation is based on the results of the experiments.

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2. Theoretical Analysis

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**Massasoit Community College** is working with UM Boston to facilitate transfer of students to the UMB composition program.

Massasoit would like to revive successful ventures by English faculty with Brockton High School which have been canceled due to fiscal constraints.

**Mass Bay Community College** is participating in an Urban Collaborative with UM Boston and Framingham State College.

Mass Bay offers writing and math assessment testing of area vocational school freshmen and juniors.

**Mt Wachusett Community College** discussions with Fitchburg State College are now underway.

Mt Wachusett arranges for Tech Prep students from 12 local schools to complete computerized assessment testing during their junior year.

**Middlesex Community College (MSCC)** has held discussions with UM Lowell to have UML refer to Middlesex prospective students living in the area whose applications were not accepted due to academic deficiencies. Students would complete required developmental work at Middlesex during the summer or during the school year through the NECCUM network.

Discussions are under way between Middlesex and Lowell High School to provide on-site course placement testing in reading, writing and math for all seniors who have applied to Middlesex. A small pilot program implemented in May, 1996 will be expanded during the following academic year to accommodate earlier and perhaps multiple testing sessions throughout the year. A proposal has been made for MSCC to test juniors at Lowell High School. The intent is to give students a realistic assessment of their academic skill level while they still have time to improve. If this proposal is implemented the College Board has expressed a willingness to donate tests for the project's pilot year.

**North Shore Community College** is beginning discussions with Salem State, UM Lowell, Middlesex, and Northern Essex Community Colleges to set up a developmental advisory group.

**Northern Essex Community College (NECC)** is discussing the establishment of a developmental advisory group with other public colleges in the north shore region.

Northern Essex participates in several ongoing projects with feeder high schools including the NECC High School Collaborative Project with Merrimack Valley High Schools. The Project works with high school seniors to provide basic skills assessment early in the Spring so that students who need reading, writing or math skills development may take the required course(s) during the summer prior to their college freshman year. NECC also participates in the Mass. Educational Opportunity Program (MEOP) which aims to increase high school retention and graduation rates and prepare disadvantaged youth from Lawrence High School for successful college enrollment.

**Quinsigamond Community College** is currently working collaboratively with Worcester State College to develop an innovative model for delivering developmental instruction.

Quinsigamond works with Tech Prep in Worcester and with Worcester Public School teachers to establish skills centers and appropriate curricular materials. QCC has also negotiated articulation agreements in electronics with area vocational schools.





**Roxbury Community College (RCC)** is working with three other community colleges and UM Boston to develop a collaborative program.

RCC currently participates in Metro Boston Tech Prep, MVOTC (Lawrence/Lowell area), and Southeastern Massachusetts consortia. Roxbury operates the STRIVE program which aims to enhance educational opportunities for at risk students.

**Springfield Technical Community College (STCC)** is holding discussions with UM Amherst and with other regional community colleges to collaborate on the delivery of developmental instruction with discovery of cost-savings methods as a goal.

STCC has been a lead member of the Tech Prep West consortium for five years. So far two-thirds of the 19 participating high schools have upgraded curricula significantly, especially in math and science. "General track" students are now enrolled in Tech Prep math courses which cover one or more years of algebra. At least 6 high schools have implemented Principles of Technology (applied physics) courses which afford an alternative to traditional College Prep physics for students who otherwise would not have had any exposure to physics. STCC faculty are partnering with individual high school teachers to promote early assessment of high school students through utilization of a version of STCC's placement test, followed by recommendations for jointly-developed remedial work to address transitional needs in the high school senior year.





## Appendix C: Sources for Additional Information

### ***Associations for developmental education***

National Association of Developmental Education  
College Reading/Learning Association  
National Center for Developmental Education  
Center for Supplemental Instruction  
College Composition and Communication Conference

### ***Tutoring available on-line through the World Wide Web***

How to Survive College  
Purdue On-Line Writing Lab  
On-Line Writing Tutoring  
International Tutoring  
How to Study

### ***Computer developmental education discussion groups***

CL. Cooperative Learning Discussion Group. *listserv@jaring.my*.  
CL\_NEWS. Cooperative and Collaborative Learning Discussion Group.  
*listserv@inbvm.ucsf.indiana.edu*.  
FYE-LIST. First Year Experience Discussion Group.  
*listserv@univscvm.csd.sc.edu*.  
LRNASST. Learning Assistance Discussion Group (used by NADE)  
*listserv@listserv.arizona.edu*. (URL for this NADE-endorsed group is  
*ftp://listserv.ccit.arizona/pub/listserv/lrnasst*.)  
NCEOA-I. National Council for Educational Opportunity Associations  
*listserv@vm.1.nodak.edu*  
PAL. Peer Assisted Learning. *maiser@psychology.dundee.ac.uk*.  
SINET/ Supplemental Instruction Discussion Group.  
*Slnet-Request@cctr.umkc.edu*.  
ACADV. Faculty and professional advisors engaged in academic advising.  
*listserv@gwuvvm.gwu.edu*.  
ASSESS. Assessment in higher education discussion list.  
*listserv@ukcc.uky.edu*.  
STU-DEV. Student development discussion list. *listserv@cms.cc.wayne.edu*.







## Appendix D: Massachusetts Public Institutions of Higher Learning

### **Community Colleges**

Executive Office	617-542-2911
<i>Admissions Offices</i>	
Berkshire Community College	413 499-4660 x242
Bristol Community College	508 678-2811 x2179
Bunker Hill Community College	617 228-2235
Cape Cod Community College	508 362-2131 x4311
Greenfield Community College	413 774-3131 x232
Holyoke Community College	413 552-2850
Massachusetts Bay Community College	617 239-2557
Massasoit Community College	508 588-9100 x411
Middlesex Community College	800 643-5739
Mt Wachusett Community College	508 632 6600 x110
North Shore Community College	508 762-4042
Northern Essex Community College	508 374-3600
Quinsigamond Community College	508 854-4262
Roxbury Community College	617 541-5310
Springfield Technical Community College	413 781-7822 x3855

### **State Colleges**

Executive Office	508 793-8870
<i>Admissions Offices</i>	
Bridgewater State College	508 697-1237
Fitchburg State College	508 665-3144
Framingham State College	508 626-4500
Massachusetts College of Art	617 232-1555 x 235
Massachusetts Maritime Academy	800 544-3411
North Adams State College	800 292-6632 x5410
Salem State College	508 741-6200
Westfield State College	413 568-3311 x218
Worcester State College	508 793-8040

### **University Campuses**

President's Office	617 287-7000
<i>Admissions Offices</i>	
University of Massachusetts Amherst	413 545-0222
University of Massachusetts Boston	617 287-6100
University of Massachusetts Dartmouth	508 999-8605
University of Massachusetts Lowell	508 934-3940







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